

WHAT IS CLAIMED IS:

1. A repeat use data inserting apparatus for repeatedly inserting repeat use data into program data in accordance with appropriate timings, comprising:

data holding means for holding said repeat use data made of a plurality of material data in the form of separately encoded streams; and

data multiplexing means for multiplexing separately encoded streams of a plurality of material data constituting said program data during a period other than a data insertion period during which said repeat use data is inserted into said program data, said data multiplexing means further inserting repeatedly said repeat use data into said program data during said data insertion period by multiplexing the separately encoded streams of said plurality of material data constituting said repeat use data held in said data holding means.

2. A repeat use data inserting apparatus according to claim 1, further comprising temporary holding means for reading and temporarily holding the repeat use data from said data holding means during a period other than said data insertion period;

wherein said data multiplexing means uses the repeat use data held in said temporary holding means in place of the repeat use data held in said data holding means.

3. A repeat use data inserting apparatus according to claim 2, wherein said temporary holding means includes:

holding means for temporarily holding said repeat use data;

remaining data detecting means for detecting the quantity of the repeat use data left in said holding means; and

transfer means for transferring the repeat use data from said data holding means to said holding means during a period other than said data insertion period in accordance with a detection output from said remaining data detecting means, so that the repeat use data held in said holding means will reach a predetermined quantity.

4. A repeat use data inserting apparatus according to claim 1, further comprising size data holding means for holding size data about each of said plurality of material data constituting said repeat use data;

wherein said data multiplexing means multiplexes,

on the basis of said size data held in said size data holding means, the separately encoded streams of said plurality of material data constituting said repeat use data held in said data holding means.

5. A digital broadcast transmitting system for repeatedly inserting repeat use data into program data so as to unify said repeat use data and said program data into one data stream and for transmitting the unified data stream, said digital broadcast transmitting system comprising:

program data encoding means for separately encoding a plurality of material data constituting said program data in order to generate the separately encoded streams of the material data;

data holding means for holding said repeat use data made of a plurality of material data in the form of separately encoded streams; and

data multiplexing means for multiplexing, during a period other than a data insertion period during which said repeat use data is inserted into said program data, the separately encoded streams of said plurality of material data constituting said program data output from said program data encoding means, said data multiplexing means

further inserting repeatedly said repeat use data into said program data in accordance with appropriate timings during said data insertion period by multiplexing the separately encoded streams of said plurality of material data constituting said repeat use data held in said data holding means.

6. A digital broadcast transmitting system according to claim 5, further comprising temporary holding means for reading and temporarily holding the repeat use data from said data holding means during a period other than said data insertion period;

wherein said data multiplexing means uses the repeat use data held in said temporary holding means in place of the repeat use data held in said data holding means.

7. A digital broadcast transmitting system according to claim 6, wherein said temporary holding means includes:

holding means for temporarily holding said repeat use data;

remaining data detecting means for detecting the quantity of the repeat use data left in said holding means;

and

transfer means for transferring the repeat use data from said data holding means to said holding means during a period other than said data insertion period in accordance with a detection output from said remaining data detecting means, so that the repeat use data held in said holding means will reach a predetermined quantity.

8. A digital broadcast transmitting system according to claim 5, further comprising size data holding means for holding size data about each of said plurality of material data constituting said repeat use data;

wherein said data multiplexing means multiplexes, on the basis of said size data held in said size data holding means, the separately encoded streams of said plurality of material data constituting said repeat use data held in said data holding means.

9. A digital broadcast transmitting system according to claim 5, wherein said program data encoding means receives a plurality of channels of program data and separately encodes each of said plurality of channels of program data; and

wherein said data multiplexing means receives said

plurality of channels of program data encoded by said data encoding means, and multiplexes each of said plurality of channels of program data with said repeat use data;

said digital broadcast transmitting system further comprising multi-channel developing means for developing into multiple channels said plurality of channels of multiplexed outputs from said data multiplexing means.